RAW SEQUENCE LISTING DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:13

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

<110> APPLICANT: Hilton, Douglas J.
Alexander, Warren S.
Viney, Elizabeth M.
Wilson, Tracy A.
Richardson, Rachel
Starr, Robyn
Nicholson, Sandra E.
Metcalf, Donald
Nicola, Nicos A.
<120> TITLE OF INVENTION: THERAPEUTIC AND DIAGNOSTIC AGENTS
<130> FILE REFERENCE: Davies Collison Cave
<140> CURRENT APPLICATION NUMBER: 08/962,560C
<141> CURRENT FILING DATE: 1997-10-31
<160> NUMBER OF SEQ ID NOS: 68
<170> SOFTWARE: PatentIn Ver. 2.1
<210> SEQ ID NO: 1
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence:Primer
<400> SEQUENCE: 1
cacgccgccc acgtgaaggc 20
<210> SEQ ID NO: 2
<211> LENGTH: 20
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Description of Artificial Sequence:Primer
<400> SEQUENCE: 2
ttcgccaatg acaagacgct 20
<210> SEQ ID NO: 3
<211> LENGTH: 1235
<212> TYPE: DNA
<213> ORGANISM: Mus musculus
<220> FEATURE:
<221> NAME/KEY: CDS
<222> LOCATION: (161)..(799)
<400> SEQUENCE: 3
cgaggctcaa gctccgggcg gatctgcgt gccgctctcg ctccttgggg tctgttggcc 60
ggcctgtgcc acccggacgc ccggctcact gcctctgtct cccccatcag cgcagccccg 120
gacgctatgg cccacccctc cagctggccc ctcgagtagg 160
atg gta gca cgc aac cag gtg gca gcc gac aat gcg atc tcc ccg gca 208
Met Val Ala Arg Asn Gln Val Ala Ala Asp Asn Ala Ile Ser Pro Ala
1 5 10 15
gca gag ccc cga cgg cgg tca gag ccc tcc tcg tcc tcg tct tcg tcc 256
Ala Glu Pro Arg Arg Arg Ser Glu Pro Ser Ser Ser Ser Ser Ser Ser

RAW SEQUENCE LISTING DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:13

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

```
71              20                  25                  30
73 tcg cca gcg gcc ccc gtg cgt ccc cgg ccc tgc ccg gcg gtc cca gcc   304
74 Ser Pro Ala Ala Pro Val Arg Pro Arg Pro Cys Pro Ala Val Pro Ala
75          35                  40                  45
77 cca gcc cct ggc gac act cac ttc cgc acc ttc cgc tcc cac tcc gat   352
78 Pro Ala Pro Gly Asp Thr His Phe Arg Thr Phe Arg Ser His Ser Asp
79      50                  55                  60
81 tac cgg cgc atc acg cgg acc agc gcg ctc ctg gac gcc tgc ggc ttc   400
82 Tyr Arg Arg Ile Thr Arg Thr Ser Ala Leu Leu Asp Ala Cys Gly Phe
83  65                  70                  75                  80
85 tat tgg gga ccc ctg agc gtg cac ggg gcg cac gag cgg ctg cgt gcc   448
86 Tyr Trp Gly Pro Leu Ser Val His Gly Ala His Glu Arg Leu Arg Ala
87                  85                  90                  95
89 gag ccc gtg ggc acc ttc ttg gtg cgc gac agt cgt caa cgg aac tgc   496
90 Glu Pro Val Gly Thr Phe Leu Val Arg Asp Ser Arg Gln Arg Asn Cys
91              100                 105                 110
93 ttc ttc gcg ctc agc gtg aag atg gct tcg ggc ccc acg agc atc cgc   544
94 Phe Phe Ala Leu Ser Val Lys Met Ala Ser Gly Pro Thr Ser Ile Arg
95          115                 120                 125
97 gtg cac ttc cag gcc ggc cgc ttc cac ttg gac ggc agc cgc gag acc   592
98 Val His Phe Gln Ala Gly Arg Phe His Leu Asp Gly Ser Arg Glu Thr
99      130                 135                 140
101 ttc gac tgc ctt ttc gag ctg ctg gag cac tac gtg gcg gcg ccg cgc   640
102 Phe Asp Cys Leu Phe Glu Leu Leu Glu His Tyr Val Ala Ala Pro Arg
103 145                 150                 155                 160
105 cgc atg ttg ggg gcc ccg ctg cgc cag cgc cgc gtg cgg ccg ctg cag   688
106 Arg Met Leu Gly Ala Pro Leu Arg Gln Arg Arg Val Arg Pro Leu Gln
107                 165                 170                 175
109 gag ctg tgt cgc cag cgc atc gtg gcc gcc gtg ggt cgc gag aac ctg   736
110 Glu Leu Cys Arg Gln Arg Ile Val Ala Ala Val Gly Arg Glu Asn Leu
111             180                 185                 190
113 gcg cgc atc cct ctt aac ccg gta ctc cgt gac tac ctg agt tcc ttc   784
115 Ala Arg Ile Pro Leu Asn Pro Val Leu Arg Asp Tyr Leu Ser Ser Phe
116         195                 200                 205
118 ccc ttc cag atc tga ccggctg ccgctgtgcc gcagcattaa gtgggggcgc      836
119 Pro Phe Gln Ile
120     210
122 cttattattt cttattatta attattatta ttttttctgga accacgtggg agccctcccc 896
124 gcctgggtcg gagggagtgg ttgtggaggg tgagatgcct cccacttctg gctggagacc 956
126 tcatcccacc tctcaggggt gggggtgctc ccctcctggt gctccctccg ggtccccccc 1016
128 ggttgtagca gcttgtgtct ggggccagga cctgaattcc actcctacct ctccatgttt 1076
130 acatattccc agtatctttg cacaaaccag gggtcgggga gggtctctgg cttcattttt 1136
132 ctgctgtgca gaatatccta ttttatattt ttacagccag tttaggtaat aaacttttatt 1196
134 atgaaagttt ttttttaaaa gaaaaaaaaa aaaaaaaaa                      1235
137 <210> SEQ ID NO: 4
138 <211> LENGTH: 212
139 <212> TYPE: PRT
140 <213> ORGANISM: Mus musculus
142 <400> SEQUENCE: 4
```

RAW SEQUENCE LISTING DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:13

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

```
143 Met Val Ala Arg Asn Gln Val Ala Ala Asp Asn Ala Ile Ser Pro Ala
144   1               5                  10                  15
146 Ala Glu Pro Arg Arg Arg Ser Glu Pro Ser Ser Ser Ser Ser Ser Ser
147              20                  25                  30
149 Ser Pro Ala Ala Pro Val Arg Pro Arg Pro Cys Pro Ala Val Pro Ala
150          35                  40                  45
152 Pro Ala Pro Gly Asp Thr His Phe Arg Thr Phe Arg Ser His Ser Asp
153      50                  55                  60
155 Tyr Arg Arg Ile Thr Arg Thr Ser Ala Leu Leu Asp Ala Cys Gly Phe
156  65                  70                  75                  80
158 Tyr Trp Gly Pro Leu Ser Val His Gly Ala His Glu Arg Leu Arg Ala
159                  85                  90                  95
161 Glu Pro Val Gly Thr Phe Leu Val Arg Asp Ser Arg Gln Arg Asn Cys
162             100                 105                 110
164 Phe Phe Ala Leu Ser Val Lys Met Ala Ser Gly Pro Thr Ser Ile Arg
165         115                 120                 125
167 Val His Phe Gln Ala Gly Arg Phe His Leu Asp Gly Ser Arg Glu Thr
168     130                 135                 140
171 Phe Asp Cys Leu Phe Glu Leu Leu Glu His Tyr Val Ala Ala Pro Arg
172 145                 150                 155                 160
174 Arg Met Leu Gly Ala Pro Leu Arg Gln Arg Arg Val Arg Pro Leu Gln
175                 165                 170                 175
177 Glu Leu Cys Arg Gln Arg Ile Val Ala Ala Val Gly Arg Glu Asn Leu
178             180                 185                 190
180 Ala Arg Ile Pro Leu Asn Pro Val Leu Arg Asp Tyr Leu Ser Ser Phe
181         195                 200                 205
183 Pro Phe Gln Ile
184     210
187 <210> SEQ ID NO: 5
188 <211> LENGTH: 1121
189 <212> TYPE: DNA
190 <213> ORGANISM: Mus musculus
192 <220> FEATURE:
193 <221> NAME/KEY: CDS
194 <222> LOCATION: (223)..(819)
196 <400> SEQUENCE: 5
197 gcgatctgtg ggtgacagtg tctgcgagag actttgccac accattctgc cggaatttgg 60
199 agaaaaagaa ccagccgctt ccagtcccct ccccctccgc caccatttcg gacaccctgc 120
201 acactctcgt tttggggtac cctgtgactt ccaggcagca cgcgaggtcc actggcccca 180
203 gctcgggcga ccagctgtct gggacgtgtt gactcatctc cc atg acc ctg cgg    234
204                                                 Met Thr Leu Arg
205                                                   1
207 tgc ctg gag ccc tcc ggg aat gga gcg gac agg acg cgg agc cag tgg   282
208 Cys Leu Glu Pro Ser Gly Asn Gly Ala Asp Arg Thr Arg Ser Gln Trp
209   5                  10                  15                  20
211 ggg acc gcg ggg ttg ccg gag gaa cag tcc ccc gag gcg gcg cgt ctg   330
212 Gly Thr Ala Gly Leu Pro Glu Glu Gln Ser Pro Glu Ala Ala Arg Leu
213                 25                  30                  35
215 gcg aaa gcc ctg cgc gag ctc agt caa aca gga tgg tac tgg gga agt   378
```

RAW SEQUENCE LISTING DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:13

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

```
216 Ala Lys Ala Leu Arg Glu Leu Ser Gln Thr Gly Trp Tyr Trp Gly Ser
217              40                  45                  50
219 atg act gtt aat gaa gcc aaa gag aaa tta aaa gag gct cca gaa gga   426
220 Met Thr Val Asn Glu Ala Lys Glu Lys Leu Lys Glu Ala Pro Glu Gly
221          55                  60                  65
223 act ttc ttg att aga gat agt tcg cat tca gac tac cta cta act ata   474
224 Thr Phe Leu Ile Arg Asp Ser Ser His Ser Asp Tyr Leu Leu Thr Ile
225      70                  75                  80
227 tcc gtt aag acg tca gct gga ccg act aac ctg cgg att gag tac caa   522
228 Ser Val Lys Thr Ser Ala Gly Pro Thr Asn Leu Arg Ile Glu Tyr Gln
229  85                  90                  95                 100
231 gat ggg aaa ttc aga ttg gat tct atc ata tgt gtc aag tcc aag ctt   570
232 Asp Gly Lys Phe Arg Leu Asp Ser Ile Ile Cys Val Lys Ser Lys Leu
233                 105                 110                 115
235 aaa cag ttt gac agt gtg gtt cat ctg att gac tac tat gtc cag atg   618
236 Lys Gln Phe Asp Ser Val Val His Leu Ile Asp Tyr Tyr Val Gln Met
237             120                 125                 130
239 tgc aag gat aaa cgg aca ggc cca gaa gcc cca cgg aat ggg act gtt   666
240 Cys Lys Asp Lys Arg Thr Gly Pro Glu Ala Pro Arg Asn Gly Thr Val
241         135                 140                 145
243 cac ctg tac ctg acc aaa cct ctg tat aca tca gca ccc act ctg cag   714
244 His Leu Tyr Leu Thr Lys Pro Leu Tyr Thr Ser Ala Pro Thr Leu Gln
245     150                 155                 160
247 cat ttc tgt cga ctc gcc att aac aaa tgt acc ggt acg atc tgg gga   762
248 His Phe Cys Arg Leu Ala Ile Asn Lys Cys Thr Gly Thr Ile Trp Gly
249 165                 170                 175                 180
251 ctg cct tta cca aca aga cta aaa gat tac ttg gaa gaa tat aaa ttc   810
252 Leu Pro Leu Pro Thr Arg Leu Lys Asp Tyr Leu Glu Glu Tyr Lys Phe
253                 185                 190                 195
255 cag gta taagtatttc tctctctttt tcgttttttt ttaaaaaaaa aaaaacacat    866
256 Gln Val
258 gcctcatata gactatctcc gaatgcagct atgtgaaaga gaacccagag gccctcctct 926
260 ggataactgc gcagaattct ctcttaagga cagttgggct cagtctaact taaaggtgtg 986
262 aagatgtagc taggtatttt aaagttcccc ttaggtagtt ttagctgaat gatgctttct 1046
264 ttcctatggc tgctcaagat caaatggccc ttttaaaatga aacaaaacaa aacaaaacaa 1106
266 aaaaaaaaaa aaaaa                                                 1121
269 <210> SEQ ID NO: 6
270 <211> LENGTH: 198
271 <212> TYPE: PRT
272 <213> ORGANISM: Mus musculus
274 <400> SEQUENCE: 6
276 Met Thr Leu Arg Cys Leu Glu Pro Ser Gly Asn Gly Ala Asp Arg Thr
277   1               5                  10                  15
279 Arg Ser Gln Trp Gly Thr Ala Gly Leu Pro Glu Glu Gln Ser Pro Glu
280              20                  25                  30
283 Ala Ala Arg Leu Ala Lys Ala Leu Arg Glu Leu Ser Gln Thr Gly Trp
284          35                  40                  45
286 Tyr Trp Gly Ser Met Thr Val Asn Glu Ala Lys Glu Lys Leu Lys Glu
287      50                  55                  60
```

RAW SEQUENCE LISTING DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:13

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

```
289 Ala Pro Glu Gly Thr Phe Leu Ile Arg Asp Ser Ser His Ser Asp Tyr
290  65                  70                  75                  80
292 Leu Leu Thr Ile Ser Val Lys Thr Ser Ala Gly Pro Thr Asn Leu Arg
293                  85                  90                  95
295 Ile Glu Tyr Gln Asp Gly Lys Phe Arg Leu Asp Ser Ile Ile Cys Val
296             100                 105                 110
298 Lys Ser Lys Leu Lys Gln Phe Asp Ser Val Val His Leu Ile Asp Tyr
299         115                 120                 125
301 Tyr Val Gln Met Cys Lys Asp Lys Arg Thr Gly Pro Glu Ala Pro Arg
302     130                 135                 140
304 Asn Gly Thr Val His Leu Tyr Leu Thr Lys Pro Leu Tyr Thr Ser Ala
305 145                 150                 155                 160
307 Pro Thr Leu Gln His Phe Cys Arg Leu Ala Ile Asn Lys Cys Thr Gly
308                 165                 170                 175
310 Thr Ile Trp Gly Leu Pro Leu Pro Thr Arg Leu Lys Asp Tyr Leu Glu
311             180                 185                 190
313 Glu Tyr Lys Phe Gln Val
314         195
317 <210> SEQ ID NO: 7
318 <211> LENGTH: 2187
319 <212> TYPE: DNA
320 <213> ORGANISM: Mus musculus
322 <220> FEATURE:
323 <221> NAME/KEY: CDS
324 <222> LOCATION: (18)..(695)
326 <400> SEQUENCE: 7
327 cgctggctcc gtgcgcc atg gtc acc cac agc aag ttt ccc gcc gcc ggg    50
328                     Met Val Thr His Ser Lys Phe Pro Ala Ala Gly
329                       1               5                  10
331 atg agc cgc ccc ctg gac acc agc ctg cgc ctc aag acc ttc agc tcc   98
332 Met Ser Arg Pro Leu Asp Thr Ser Leu Arg Leu Lys Thr Phe Ser Ser
333              15                  20                  25
335 aaa agc gag tac cag ctg gtg gtg aac gcc gtg cgc aag ctg cag gag   146
336 Lys Ser Glu Tyr Gln Leu Val Val Asn Ala Val Arg Lys Leu Gln Glu
337          30                  35                  40
339 agc gga ttc tac tgg agc gcc gtg acc ggc ggc gag gcg aac ctg ctg   194
340 Ser Gly Phe Tyr Trp Ser Ala Val Thr Gly Gly Glu Ala Asn Leu Leu
341      45                  50                  55
343 ctc agc gcc gag ccc gcg ggc acc ttt ctt atc cgc gac agc tcg gac   242
344 Leu Ser Ala Glu Pro Ala Gly Thr Phe Leu Ile Arg Asp Ser Ser Asp
345  60                  65                  70                  75
347 cag cgc cac ttc ttc acg ttg agc gtc aag acc cag tcg ggg acc aag   290
348 Gln Arg His Phe Phe Thr Leu Ser Val Lys Thr Gln Ser Gly Thr Lys
349                  80                  85                  90
351 aac cta cgc atc cag tgt gag ggg ggc agc ttt tcg ctg cag agt gac   338
352 Asn Leu Arg Ile Gln Cys Glu Gly Gly Ser Phe Ser Leu Gln Ser Asp
353              95                 100                 105
355 ccc cga agc acg cag cca gtt ccc cgc ttc gac tgt gta ctc aag ctg   386
356 Pro Arg Ser Thr Gln Pro Val Pro Arg Phe Asp Cys Val Leu Lys Leu
```

FYI:

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

VERIFICATION SUMMARY DATE: 11/16/2000
PATENT APPLICATION: US/08/962,560C TIME: 16:31:14

Input Set : A:\10976.asc
Output Set: N:\CRF3\11162000\H962560C.raw

L:1085 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:1117 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:1137 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:17
L:1237 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:1264 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:1279 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:18
L:1730 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24
L:1774 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25
L:1915 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:1919 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28
L:2523 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:41
L:2678 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:44
L:3416 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3419 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3422 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3425 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3428 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3431 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3434 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51
L:3437 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:51